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Deadly DuPont leak exposes safety, response failures

Chemical plant officials slow to react to disaster, minimized risk to fire crews, public in first 911 call

By [Lise Olsen](#) and [Mark Collette](#)

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Five DuPont workers - four of them already dead or dying - had been trapped for an hour by poisonous gases inside a pesticide plant when another worker called 911 to report an emergency at 4:13 a.m.

The accident scene - a multistory building where DuPont makes a pesticide that is rated highly toxic to human life - typically housed between 50 to 250 tons of highly flammable methyl mercaptan. Nearby, there was a much smaller but unknown amount of one of the most notorious substances in industrial manufacturing: methyl isocyanate, according to public records and former DuPont employees interviewed by the Houston Chronicle.

It is so-called MIC that escaped a Bhopal, India, pesticide plant and formed a toxic cloud in 1984, initially killing more than 2,200 people in the world's worst industrial disaster.

But last Saturday, on Nov. 15, DuPont shift supervisor Jody Knowles gave no details about the chemicals involved and minimized the risk in the 911 call to the La Porte fire department.

"We have a possible casualty five (workers) my medics are telling me," he told a dispatcher.

She immediately asked: "Can you tell me is this any risk to the public? Is it gonna



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be a possible escaping from your premises?"

"No ma'am, it is not," Knowles responded.

At that time, public records show, no air tests had been conducted outside the plant, and it's unknown whether Knowles - or anyone else at DuPont - knew what the gas levels were beyond the fence line.

The incident is the worst loss of life in an industrial accident at the world's biggest petrochemical complex since 2005, when a refinery explosion killed 15 workers in Texas City.

Investigations are ongoing, but already it's clear that the response to the emergency was inadequate and slow, especially given the scope of the disaster, that the accident site had been plagued with recurring maintenance problems, and that workers lacked quick access to breathing equipment that would have given them a better chance at survival.

Those killed included Crystle Rae Wise, 53, the first to alert others of a leak; Wade Baker, 60, a longtime supervisor; and brothers Gilbert and Robert Tisnado, 48 and 39, respectively.

No DuPont official contacted a special emergency industrial response network called the Channel Industries Mutual Aide, a nonprofit formed to deal with potentially deadly disasters. It took hours before DuPont verified that anyone had died - and the name of the worker who survived the accident has not been provided. DuPont has refused to clarify how many pounds of toxins were released.

"There are inter-related plants that use emergency vehicles from others ... but in this case, the response did not work," said U.S. Rep. Gene Green, whose district includes half of the Houston Ship Channel. "That's one of the things I find most alarming: Why didn't the regional emergency response group come?"

Not enough oxygen masks

Robert Cooper, who acts as chairman of the CIMA, first formed in 1955, confirmed that his group was not summoned until after La Porte city officials arrived and assessed the situation.

"(DuPont) didn't set up an incident command center and connect with CIMA," he said.

Based on preliminary information, Cooper said CIMA might not have been able to save the workers who died. "But at least we would have had the opportunity to try."

Nor did DuPont disclose the size of its toxic inventory in a report that the company files each year with La Porte emergency management officials. Texas requires disclosure of the chemicals but not the amounts, according to Jeff Suggs, the La Porte emergency response coordinator.

Volunteer firefighters from Deer Park, who responded to the company's 911 call, had to rely on word-of-mouth to confirm quantities, Suggs said.

Nearly a week after the accident, officials have said only that the release exceeded the minimum reportable quantity of 100 pounds. The accident remains under investigation by the Occupational Safety and Health Administration, the Chemical Safety Board and by DuPont officials, who declined comment.

The unit where workers died had been shut down for five days before the accident and workers had reported persistent maintenance problems, according to Green, who belongs to a congressional committee that oversees the Chemical Safety Board. For months before that, according to Green and others, workers had complained about inadequate ventilation in the unit, which produces Lannate, DuPont's brand name for methomyl, a crop pesticide.

Despite persistent problems, DuPont apparently did not have enough emergency oxygen and masks on hand that Saturday for the workers who died trying to fix a leak or help others escape, according to Green, whose district includes other

plants, though not the La Porte complex.

It was about 3:15 a.m. when Gilbert Tisnado, known as "Gibby," told his wife via cellphone that something had gone wrong at the Lannate unit. At some point, Tisnado learned that workers - including his younger brother and at least three others - were trapped inside, his father said.

Tisnado got at least one "escape pack" - possibly from another building - and ran to the rescue. He either ran out of oxygen or took off his mask to help his brother, his father said.

Firefighters later encountered three bodies but only two tanks and masks inside the plant. Each is equipped with only five minutes of air. That's intended to be enough for an emergency escape, not for a rescue mission, according to Deer Park Volunteer Fire Department Chief Greg Bridges.

The firefighters did not see the fourth victim during that first and only foray into the Lannate unit because their own tanks couldn't provide enough air to explore the entire facility. They didn't know the layout of the building - a maze filled with pipes, towers, tanks and platforms, Bridges said, so they had to move deliberately. DuPont had already labeled the mission a recovery of the dead, not a rescue, Bridges said.

Community left in the dark

In DuPont's only statement on the incident, released two days after the accident, it acknowledged that medical personnel could not reach the employees because they were not trained in the use of protective equipment. Those who did respond - before 7 a.m. - reported that the employees were "nonresponsive and likely fatalities," according to the statement.

Bridges said firefighters did not attempt to re-enter the building right away because there was still uncertainty as to the release of other chemicals, including the deadly MIC.

While the 911 call came from DuPont at 4:13 a.m., more than two hours passed before any agency conducted "fenceline" air monitoring to determine if hazardous levels of chemicals had escaped the plant.

A Harris County hazardous materials crew, dispatched at 6:17 a.m., detected nothing toxic in the air. A separate county crew later confirmed those readings.

But for the first two hours, the community depended on DuPont to know whether it was safe to go outside. Emergency managers, relying on assurances from the company, chose not to use La Porte's reverse 911 system to call until 8 a.m. Nearby Pasadena has no reverse 911 system.

The 8 a.m. call informed thousands of La Porte and Deer Park homes that lingering, pungent cabbage odors were harmless. The human nose detects methyl mercaptan at levels far less than what's considered a threat - that's why it has been used as an additive to natural gas to help detect leaks.

But no one - then or now - has revealed how much mercaptan or any other material leaked. While MIC is lethal at concentrations 50 times lower, methyl mercaptan can still kill at concentrations as low as 150 parts per million, a mere drop in 12 ounces.

The assurances from plant personnel began even before the mercaptan leak had been assessed and stabilized, according to dispatch logs and 911 recordings.

"It's probably not even likely DuPont would have had comprehensive toxics fenceline monitoring," said Adrian Shelley, director of the advocacy group Air Alliance Houston.

The refining industry, especially, has balked at calls for continuous fenceline monitoring, which provides streams of data about what gases are leaving a plant but can cost tens or hundreds of thousands of dollars, Shelley said. A U.S. Environmental Protection Agency rule that would require such systems at refineries is under review. Even if adopted, it wouldn't apply to the DuPont plant

because it doesn't refine fossil fuels.

Shelley and other environmentalists say the ideal solution is a continuous feed of monitoring information directly accessible online by the public, so they aren't waiting to hear alarms or get messages on notification systems for which they may not even have registered.

It's unclear if the workers killed had advance warning of the degree of toxicity inside the unit.

"I wish they had something more accurate so you got to know the problem right away, and you're not waiting an hour or two hours after somebody got hurt," said Juan Alvarado, a truck driver who smelled the mercaptan at about 7 a.m. on his Saturday shift in the industrial corridor. He had no idea what it was; he thought it might be a truck exhaust problem.

"You are exactly right: We have to trust the company in telling us what they have," said Suggs, the coordinator for La Porte.

Mercaptan in the air

Where emergency responders usually have experts from a plant on hand to explain the intricacies of a malfunctioning unit or the safety concerns about a particular chemical, the experts this time were dead inside the building. Firefighters smelled mercaptan on their way to the plant, but experienced no symptoms. They saw no cloud, no spray, no mist.

"They see nothing out of the ordinary, and so that's why they believed what they had from DuPont at that time," Suggs said.

The plant is one of the oldest and most sprawling complexes on the Houston Ship Channel, and for years, DuPont has been selling off parts of its operations and cutting its staff. The plant itself has employees trained in basic firefighting. Robert Tisnado was one. But the internal response duties are now shared by more than one company, and it's unclear who was leading up the internal effort on Saturday

or how many employees were on duty for DuPont during the overnight shift.

The Lannate unit is the largest one left on the site, said Ken Martin, who retired from DuPont in 2011 but still works as a safety consultant. Martin said when he worked at DuPont, there was a row of masks and tanks to use in emergencies just outside the control room near the accident site and full emergency gear elsewhere on plant property. Other former company workers said that DuPont normally keeps an ambulance there in case of emergencies.

Mechanical failure suspected

Over the last several decades, the unit has been redesigned several times to make it safer and to minimize the volumes and the risks, specifically of working with MIC, the chemical associated with the Bhopal disaster. Engineers even won a design award for one of those efforts, which allowed MIC to be created on site and used immediately to eliminate transportation and storage.

DuPont's La Porte plant has reported three previous accidents with major injuries, involving four people, that prompted evacuations and property damages in the last five years, according to data archived by the Right To Know Network, a project of the nonprofit Center for Effective Government. Only four other major industrial plants nationwide have reported more than three recent accidents, according to that data.

Martin said he has no inside information or answers for what caused such a leak and loss of life - he and others described one of the employees who died Saturday, Wade Baker, as one of the company's most seasoned managers.

Former engineers and chemists who worked on the Lannate process said they believe a mechanical failure must be involved, though it surprised those employees, who said DuPont was a stickler for safety on its process systems.

"There are many parallel investigations taking place," Martin said. "We have to let those people do their work and deal with facts and deal with data. ... We learn lessons from every incident investigation that we do."

Chronicle reporter Karen Chen contributed to this story.

Regards,

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